THE SENSATIONS OF LIGHT AND COLOR.—A. Charpentier, *C. R. Acad. des Sciences*, March 20 and 27, 1878 (abstr. in *Revue des Sciences Médicales*). The sensations of light and those of color are the results of two very distinct functions, which while intimately associated in the habitual exercise of vision, can be neatly isolated in physiological analysis, the sensation of color being essentially variable, according to the point of the retina considered, and by numerous experimental conditions, independently of the luminous sensibility, but, reciprocally, the luminous sensibility may change under certain conditions while the sensibility to colors remains constant. Thus the eye that has rested in darkness possesses a much greater luminous sensibility than that which has been in constant activity, while in the one as in the other we find the same minimum for the appreciation of each color, *i. e.*, the chromatic sensibility is not modified either by exercise or repose. To explain the effect of resting the eye, on the sensibility to light, we may invoke the facts noticed by Boll, viz., that there exists in the retina a chemical substance of a red color, which the light bleaches, and which regenerates itself in darkness, and admitting next that the optic nerve is excited, not directly by the light but indirectly by the chemical modification which the light produces in the retinal red; the resting of the eye in obscurity produces therefore an increase of sensibility to light on account of the presence in it of the photo-chemical red substance.

This hypothesis is confirmed by the following experiment: when we present to an eye that has just had its repose in obscurity, a pure color, that eye does not see a saturated color, but one strongly mixed with white; thus we add to the chromatic impression a strong impression of white light, such as we obtain by the aid of the mixture of color and white in the rotating disks of Chevreul.

HERING'S THEORY OF COLOR.—A work recently issued, presents Hering's theory of the perception of color. It appears to be in antagonism to Young's theory, which assumes that three different sets of fibrils in the retina are susceptible to different wave-lengths of light. Hering assumes that the perception of color is the consequence of a chemical process: in general that when an assimilation is taking place, black is perceived by one retinal substance; if dissimilation is taking place, white is perceived by the same substance. A second retinal substance furnishes the sensations blue and yellow, according as assimilation or dissimilation is taking place; a third gives under corresponding conditions the sensations red and green. The white substance is also capable to some extent of being acted on by colored light; the sensation of course still remains white. In this view, the process of perception of complementary colors is an antagonistic one. Thus, yellow and blue, which if mixed produce white, if perceived together will neutralize each other, leaving only so much of the white sensation as is due to the action of colored light on the white substance of the retina. This part of the theory, Professor Rood has tested by experiment. He finds that if a certain amount of yellow is mingled with a certain amount of blue, the white product has a total of as much light as the two colors had separately. But, if Hering's theory were correct, a certain amount of light ought to be extinguished when the colors are united. Professor Rood regards his experiments as fatal to the theory.—*Paper read before National Academy of Sciences* in N. Y., Nov., 1878. (Abstr. in *Science News*, Nov. 15.)

LOCAL VASO-MOTOR CENTRES.—At the session of the Soc. de Biologie, Nov. 9, 1878 (reported in *Le Progrès Médical*), M. Franck communicated the results of researches undertaken by himself on the peripheral circula tions of the carotid, the vertebral, and the femoral arteries. Cl. Bernard was the first to observe the independence of certain local circulations under vaso-motor influence. In his experiments, M. Franck, having tied the artery, the circulation of which he wished to study, applied a registering manometer to its peripheral portion. Thus operating he was able to ascertain the variations of pressure. These, he observed, kept up even after he divided the vascular nerves of the region involved, *i. e.*, the superior ganglion of the sympathetic for the carotid. He concludes that the independent local circulations that exist for the majority of the organs of the body are regulated by peripheral nervous apparatuses. According to him, there is a complete independence between the carotid and vertebral arteries.

THE MODE OF NERVE-TERMINATION IN THE TACT-CORPUSCLES.—At the session of the Soc. de Biologie, Nov. 9 (rep. in *Progrès Médical*), M. Renaut gave an account of the intimate structure of the tact-corpuscles, as he had been able to develop it by the use of osmic acid. He described in the Meissner corpuscles a number of compartments built up out of connective tissue. In the majority of these are found cellular elements; and the nerve terminates in one of the central compartments. M. Renaut compared this arrangement to that of the dorsal cord in the external membrane of the embryo.

SWEAT-NERVES.—As the result of continued experimentation, F. Nawrocki (*Centralblatt*, No. 40, 1878) states, that the amount of perspiration varies as much in cats as it does in man. Some animals sweat easily, others scarcely at all or only in some, but not all parts (extremities). The sweat-nerves going to the fore paw of the cat pass from the cord into the anterior root of the fourth dorsal nerve, thence through the stellate ganglion of the sympathetic into the ulnar and median nerves. Excitation of any part of this tract starts the sweat gland of the fore paw into activity. On the other hand extirpation of the stellate ganglion leads to degeneration of the sweat-nerves in their peripheral course, and hence stimulation of the ulnar or median nerves will now have no longer any influence on the sweat glands. The sweat-nerves of the hind paw pass from the cord with the anterior roots of the last (13th) dorsal and first and second lumbar nerves, enter the abdominal sympathetic and thence the sciatic nerve.

The statements of Luchsinger that minor sweat centres exist throughout the cord, the author could not confirm with much precision. Out of a large number of experiments he succeeded only three times in obtaining secretion of sweat after transverse section of the upper part of the spinal cord asphyxiating the cats. All attempts to obtain perspiration by stimulating sensory nerves after separation of the cord from the medulla failed.